DART AEROSPACE
Dart Hawkesbury
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200

Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days
PO039087	ACI001-VC	4	1	Net 30	MT-4140QT-R3.750	AISI 4140 Q&T Round Bar : MAT'L: AISI 4130 QUENCHED & TEMPERED ROUND BAR AS PER ASTM 4140 QT OR ASTM 4142 QT				6	2/28/2018	6		S046344	Stock	2/28/2018	$ 154.44 / ft	0
		5			MT-4140QT-R1.000 Astm	AISI 4140 Quenched &Tempered Steel Round Bar 1.000"" Dia. AISI 4140 Q&T Round Bar : MAT'L: AISI 4130 QUENCHED & TEMPERED ROUND BAR AS PER ASTM 4140 QT OR ASTM 4142 QT				10		10		S046345	Stock	2/28/2018	$ 4.66 / ft	0
		9			MT-HRS-R-2.500	Hot Rolled Steel Round Bar 2.500						10		S046346	Stock	2/28/2018	$ 13.68 / ft	0
		10			MT-A613-T-0.750W0.188	A513 Seamless Alloy Steel Round Tubing 0.75""dia. x 0.188"" Wall				20		24		S046347	Stock	2/28/2018	$ 4.25 / ft	0
		11			M6061T6R0.625	6061-T6 Round Bar .625"" : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117 4128/4115/4116 OR QQ-AA-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B221 OR ASTM B221 receive ft				40		40		[illegible]	Stock	2/28/2018	$ 1.00 / ft	0
		12			M6061T6R0.563	6061-T6 Round Bar .563 : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117 4128/4115/4116 OR QQ-AA-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B221 OR ASTM B221 receive ft				96		96		S046349	Stock	2/28/2018	$ 1.09 / ft	0
									Total:	182		186						

Plex 2/28/2018 9:17 AM Dart.Dubois.Pascal

DELIVERY - CLIENT

Copy CO00075651

ACIER OUELLETTE INC.
935, Boul. du Hâvre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Customer N°	CLI0001056
Date	2018/02/23
Delivery date	**2018/02/27**
Your order N°	039087
Processed by	Josianne Bourdon
Salesman	
Carrier	OUELLETTE VALLEYFIELD
Credit Terme	Net 30 Days
Page	2

Billed to
DART AEROSPACE LTD

1270 , ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Instruction F-M

Delivery Route 5

	Product Description	Weight	Qty	U/M	PCS NB CMD	PCS NB EXP	PCS NB B/O	Internal Use Only IN	I	S	C	OUT
5	ROUND 4140 HEAT TREAT 3 3/4 RANDOM R4140-334H-V **4945** *1 X 74" HEAT: L6021* *AC13839-JG-26/02*	232.86	6.00	PI_$CLB		1x74"		6'				
6	ROUND 4140 HEAT TREAT 1 RANDOM R4140-1H-V **4919** *1 X 10' HEAT: 177569* COUPE A LA SCIE SCIE **1**	26.70	10.00 1.00	PI_$CLB UN		1x10'		10'				
7	ROUND HR 2 1/2 RANDOM RHR-212-V **4866** *1 X 10' HEAT: 6214423605*	166.90	10.00	PI_$CLB		1x10'		10'				

NIR : R-109516-6

Next Page..

DELIVERY - CLIENT

Copy CO00075651

ACIER OUELLETTE INC.
935, Boul. du Hâvre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
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Customer N°	CLI0001056
Date	2018/02/23
Delivery date	**2018/02/27**
Your order N°	039087
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Salesman	
Carrier	OUELLETTE VALLEYFIELD
Credit Terme	Net 30 Days
Page	3

Billed to
DART AEROSPACE LTD

1270 , ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Instruction F-M

Delivery Route 5

Product Description	Weight	Qty	U/M	PCS NB CMD	PCS NB EXP	PCS NB B/O	Internal Use Only IN	I	S	C	OUT
COUPE A LA SCIE SCIE **1**		1.00	UN								
8 TUBE MEC 0.750 OD X .188 VARIE TME-0750188-V **6783** *1 X 20' R/L HEAT: 4150966*	22.56	20.00	PI_$CPI		1x24'		24'				
9 ROUND ALU 5/8 6061-T6 RANDOM RAL-58-V **5169** *2 X 20' HEAT: 68259*	14.44	40.00	PI_$CLB		2x20'		2x20'				
10 ROUND ALU 9/16 6061-T6 RANDOM RAL-916-V **5180** *8 X 12' HEAT: 201714863*	28.13	96.00	PI_$CLB		8x12'		8x12'				

NIR : R-109516-6

Next Page..

DELIVERY - CLIENT

Copy CO00075651

ACIER OUELLETTE INC.
935, Boul. du Hâvre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Customer N°	CLI0001056
Date	2018/02/23
Delivery date	**2018/02/27**
Your order N°	039087
Processed by	Josianne Bourdon
Salesman	
Carrier	OUELLETTE VALLEYFIELD
Credit Terme	Net 30 Days
Page	4

Billed to
DART AEROSPACE LTD

1270 , ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Instruction F-M

Delivery Route 5

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT

Total Weight (Lbs) : 639.23

NIR : R-109516-6

Conditions :
All sold and delivered materials remain the property of "Acier Ouellette Inc" until payment is made in full, complete and cashed. All lost materials are at the buyer's expense. The warranty offered by "Acier Ouellette Inc." is the same as offered and honored by the manufacturer and his warranty is transferred by "Acier Ouellette Inc." to the client. The buyer hereby accepts to respect the following conditions: Net 30 days from billing date and the buyer accepts to pay administration charges of 2% per month (24% per annum) on all past due amounts over 30 days. Any default in respect with this contract will lead to payment by acceleration and permits to the seller, at his choice to claim for the balance due or the repossession of the goods sold. All claims must be made within five (5) days with this document enclosed. Any merchandise that has been damaged, cut or modified cannot be returned. All goods returned must be with our authorization and are subject to a 25% restocking charge.

Prepared By :	Verified By :	Delivered By :	Time	Customer's Signature	Date (Y M D) 18 02 27

Total ($CAD)

Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER
PO039087

Supplier: ACI001-VC
Acier Ouellette Inc.
935 Boul. Du Havre
Valleyfield
QC
J6S 5L1 Canada
Phone: 800 667 4248
Fax: 450 377 5696

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: PO039087
PO Date: 2/22/18
Due Date: 2/28/18
Purchase Order Revision:
Revision Date:
Ship-To Contact: Lavoie, ChantalPhone: clavoie@dartaero.com

E-MAILED FEB 2 3 2018

Via: Ground
Pymt Terms: Net 30
Freight Terms:
Special Comments: quotation # sou0086168

Items

Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	M6061T6S1.250X14.000		6061-T6 Sheet 1.250" Thick x 14.000" Wide MATERIAL: 6061-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/11 OR AMS-QQ-A-250/11 OR AMS 4025 OR AMS 4027 OR ASTM B209	Firmed	3/2/18	8 ft	0 ft	8 ft	$101.01375/ft	$808.11
2	MT-4140QT-R0.625		AISI 4140 Quenched &Tempered Steel Round Bar 0.625" Dia. AISI 4140 Q&T Round Bar : MAT'L: AISI 4130 QUENCHED & TEMPERED ROUND BAR AS PER ASTM 4140 QT OR ASTM 4142 QT	Firmed	2/28/18	20 ft	0 ft	20 ft	$2.878/ft	$57.56
3	MT-4140QT-R2.750		AISI 4140 Q&T Round Bar : MAT'L: AISI 4130 QUENCHED & TEMPERED ROUND BAR AS PER ASTM 4140 QT OR ASTM 4142 QT	Firmed	2/28/18	6 ft	0 ft	6 ft	$37.57666/ft	$225.46
4	MT-4140QT-R3.750		AISI 4140 Q&T Round Bar : MAT'L: AISI 4130 QUENCHED & TEMPERED ROUND BAR AS PER ASTM 4140 QT OR ASTM 4142 QT	Firmed	2/28/18	6.167 ft	0 ft	6 ft	$154.44341/ft	$952.45

-6 FEB 2 8 2018

Line Item Note please cut bar in half to heavy for receiving

Items

Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
5	MT-4140QT-R1.000		AISI 4140 Quenched &Tempered Steel Round Bar 1.000" Dia. AISI 4140 Q&T Round Bar : MAT'L: AISI 4130 QUENCHED & TEMPERED ROUND BAR AS PER ASTM 4140 QT OR ASTM 4142 QT	Firmed	2/28/18	10 ft	0 ft 10 FEB 28 2018	10 ft	$4.664/ft	$46.64 DAS 11 9-89
6	M17-4-H1150-R2.000		17-4 SS Round Bar 2.000" : MATERIAL: 17-4 PH CONDITION H1150 receive ft	Firmed	3/6/18	6 ft	0 ft	6 ft	$100.3333/ft	$602.00
7	M17-4-H1150-R1.500		17-4 SS Round Bar 1.500" : MATERIAL: 17-4 PH CONDITION H1150 receive ft	Firmed	3/9/18	7.667 ft	0 ft	8 ft	$56.08744/ft	$430.02
8	M1018R3.125		1018 Round Bar 3.125 MATERIAL: AISI 1018-1025 ROUND BAR M1010S20GA AS PER MIL-S-7097 OR ASTM A108	Firmed	3/9/18	8 ft	0 ft	8 ft	$60.375/ft	$483.00
9	MT-HRS-R-2.500		Hot Rolled Steel Round Bar 2.500	Firmed	2/28/18	10 ft	0 ft 10 FEB 28 2018	10 ft	$13.676/ft	$136.76 DAS 11 9-89
Line Item Note	please cut bar in half to heavy for receiving									
10	MT-A513-T-0.750W0.188		A513 Seamless Alloy Steel Round Tubing 0.75"dia. x 0.188" Wall	Firmed	2/28/18	20 ft	0 ft 24 FEB 28 2018	20 ft	$4.25/ft	$85.00 DAS 11 9-89
11	M6061T6R0.625		6061-T6 Round Bar .625" : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117 4128/4115/4116 OR QQ-AA-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B221 OR ASTM B221 receive ft	Firmed	2/28/18	40 ft	0 ft 40 FEB 28 2018	40 ft	$0.99625/ft	$39.85 DAS 11 9-89
12	M6061T6R0.563		6061-T6 Round Bar .563 : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117 4128/4115/4116 OR QQ-AA-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B221 OR ASTM B221 receive ft	Firmed	2/28/18	96 ft	0 ft 96 FEB 28 2018	96 ft	$1.0897222/ft	$104.61 DAS 11 9-89

Items

Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
13	M6061T6R2.375		6061-T6 Round Bar 2.375" : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117 4128/4115/4116 OR QQ-AA-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B221 OR ASTM B221 receive ft	Firmed	2/28/18	4 ft	0 ft	4 ft	$28.75/ft	$115.00
14	M6061T6R3.750		6061-T6 Round Bar 3.750" : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117 4128/4115/4116 OR QQ-AA-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B221 OR ASTM B221 receive ft	Firmed	2/28/18	4 ft	0 ft	4 ft	$56.25/ft	$225.00
15	M6061T6R6.250		6061-T6 Round Bar 6.250" : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117 4128/4115/4116 OR QQ-AA-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B221 OR ASTM B221 receive ft	Firmed	2/28/18	4 ft	0 ft	4 ft	$147.00/ft	$588.00

Grand Total: $4,899.47

Order Notes

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)
A026 certification of material conformance
A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 2/22/18 1:26 PM dart.lavoie.chantal

ACIER OUELLETTE INC.
935, Boul. du Hâvre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Quotation

SOU0086168

Billed to

DART AEROSPACE LTD

1270 , ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Customer N°	CLI0001056
Date	2018/02/14
Revision N°	0
Prices valid until	**2018/02/21**
Your Order N°	
Processed by	Josianne Bourdon
Salesman	JOSIANNE
Carrier	OUELLE SDV
Credit Terms	Net 30 Days
Page	1

Product N° and description	Weight	Qty	U/M	Qty	U/M	Price	Pcs Nb	Price	Amount
ALU PLATE 1 1/4 6061-T651 RANDOM PAL-1146061-V **7453** *1 X 14" X 96" 4-5 JOURS*	179.60	10.00	PI2_$CLB	10.00	PI2		1.00	808.110 101.03375	808.11
ROUND 4140 HEAT TREAT 5/8 RANDOM R4140-58H-V **4977** *1 X 20' R/L 2-3 DAYS*	20.86	20.00	PI_$CLB	20.00	PI		1.00	57.560 2.878	57.56
ROUND 4140 HEAT TREAT 2 3/4 RANDOM R4140-234H-V **4931** *1 X 6' 2-3 DAYS*	126.78	6.00	PI_$CLB	6.00	PI		1.00	225.460	225.46
COUPE A LA SCIE SCIE **1**		1.00	UN	1.00				37.57666	
ROUND 4140 HEAT TREAT 3 3/4 RANDOM R4140-334H-V **4945** *1 X 74" 2-3 DAYS* 6.16666ft	232.86	6.00	PI_$CLB	6.00	PI		1.00	952.400 154.44311	952.40
ROUND 4140 HEAT TREAT 1 RANDOM R4140-1H-V **4919** *1 X 10' STOCK*	26.70	10.00	PI_$CLB	10.00	PI		1.00	46.640	46.64
COUPE A LA SCIE SCIE **1**		1.00	UN	1.00				4.664	
ROND 17-4 H1150 2" DIA **N** *1 X 6' 6-8 DAYS*	0.00	1.00	UN	1.00	UN		1.00	602.000 100.3333	602.00
ROND 17-4 H1150 1 1/2" DIA **N** *1 X 92" 7-10 DAYS* 7.66666.	0.00	1.00	UN	1.00	UN		1.00	430.000 56.08744	430.00
ROND CR 1018 3 1/8" DIA **N** *1 X 8' 7-10 DAYS*	0.00	1.00	UN	1.00	UN		1.00	483.000 60.375	483.00

Date :

Next Page...

ACIER OUELLETTE INC.
935, Boul. du Hâvre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Quotation

SOU0086168

Billed to

DART AEROSPACE LTD

1270 , ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Customer N°	CLI0001056
Date	2018/02/14
Revision N°	0
Prices valid until	**2018/02/21**
Your Order N°	
Processed by	Josianne Bourdon
Salesman	JOSIANNE
Carrier	OUELLE SDV
Credit Terms	Net 30 Days
Page	2

Product N° and description	Weight	Qty	U/M	Qty	U/M	Price	Pcs Nb	Price	Amount
ROUND HR 2 1/2 RANDOM RHR-212-V **4866** *1 X 10' STOCK*	166.90	10.00	PI_$CLB	10.00	PI		1.00	136.760	136.76
COUPE A LA SCIE SCIE **1**		1.00	UN	1.00				13.674	
TUBE MEC 0.750 OD X .188 VARIE TME-0750188-V **6783** *1 X 20' R/L STOCK*	22.56	20.00	PI_$CPI	20.00	PI		1.00	85.000	85.00
								4.25	
ROUND ALU 5/8 6061-T6 RANDOM RAL-58-V **5169** *2 X 20' STOCK*	14.44	40.00	PI_$CLB	40.00	PI		2.00	19.925	39.85
								.99625	
ROUND ALU 9/16 6061-T6 RANDOM RAL-916-V **5180** *8 X 12' STOCK*	28.13	96.00	PI_$CLB	96.00	PI		8.00	13.077	104.62
								1.0897914	
ROND ALU 2 3/8" OD 6061T6 **N** *1 X 4' 3-4 DAYS*	0.00	1.00	UN	1.00	UN		1.00	115.000	115.00
								28.75	
ROND ALU 3 3/4" OD 6061T6 **N** *1 X 4' 3-4 DAYS*	0.00	1.00	UN	1.00	UN		1.00	225.000	225.00
								56.25	
ROND ALU 6 1/4" OD 6061T6 **N** *1 X 4' 3-4 DAYS*	0.00	1.00	UN	1.00	UN		1.00	588.000	588.00
								147.00	
SURCHARGE ENERGETIQUE **FRAIS_ENERGETIQUE**			$						3.95

Total Weight (Lbs) 818.83

Important

This offer is based on availability and current pricing conditions that may be revised upon reception of the order.
This offer is subject and conditional to credit approval.

Sub-total	4 903.35
TVH-13	637.44
Total ($CAD)	**5 540.79**

Approuved and Accepted by : _____ Date : _____

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-4140QT-R1.000 PO / BATCH NO.: 039087/504634S

DATE: FEB 28 2018

MATERIAL CERT REC'D: YES THICKNESS ORDERED: 1.000

QUANTITY RECEIVED: 101 THICKNESS RECEIVED: 1.000

QUANTITY INSPECTED: 101 SHEET SIZE ORDERED: N/A

QUANTITY REJECTED: Ø SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	for Dart tooling only PO.
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	Heat # 177569
CORRECT MATERIAL IDENTFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.
RECORD RESULTS BELOW

	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: DAS 11	SIGNED OFF BY:
DATE: 9-89 FEB 28 2018	DATE:

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW ISSUE	17-790	17.12.13	VM	ML
B	MIN & MAX Rc CHANGED	18-523	18 01.24	VM	ML
C	ADD AISI 4142	18-544	18 02.14	ML	ML

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL : AISI 4140 / 4142 STEEL BAR
MINIMUM ROCKWELL C = 28 Rc
MAXIMUM ROCKWELL C = 32 Rc

SPECIFICATION: ASTM A29, AMS 6349, AMS 6382, AMS 6529, MIL-S-5626, MIL-S-24093

PART NUMBER: MT-4140-B-[T.TTT] x [W.WWW]
WHERE "T.TTT" = THICKNESS IN INCHES
WHERE "W.WWW" = WIDTH IN INCHES

EX. 4.0" x 6.0" BAR = MT-4140-B-4.000x6.000

DART AEROSPACE Hawkesbury, Ontario, Canada

TITLE: AISI 4140 / 4142 STEEL BAR

PART NO.: MT-4140-B REV: C

TOOL NO

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
INTERPRET PER ASME Y14.5M-2009
DIMENSIONS APPLY AFTER FINISHING

	INITIALS AND DATE
DESIGNED BY:	VM 12/13/2017
DRAWN BY	ML 02/14/2018
CHECKED BY:	VM 02/14/2018
MFG REVIEW BY	DD 02/14/2018
APPROVED BY:	ML 02/14/2018

TOLERANCES:
.XXX ± .005
.XX ± .01
.X ± .1
FRACTIONS ± 1/8
ANGLES ± .5°
SURFACE ROUGHNESS

SCALE: NTS | SHEET 1 OF 1

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-4140QT-R3.750 PO / BATCH NO.: 039087/5046344

DATE: FEB 28 2018

MATERIAL CERT REC'D: Yes THICKNESS ORDERED: 3.750

QUANTITY RECEIVED: 6' THICKNESS RECEIVED: 3.750

QUANTITY INSPECTED: 6' SHEET SIZE ORDERED: N/A

QUANTITY REJECTED: Ø SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	N	
CORRECT FINISH	Y	N	
CORROSION	Y	N	
CORRECT GRAIN DIRECTION	Y	N	
CORRECT MATERIAL PER M-DRAWING	Y	N	Astm 479
CORRECT THICKNESS	Y	N	
PHOTO REQUIRED	Y	N	
CORRECT REF # TO LINK CERT	Y	N	Heat# L6021
CORRECT MATERIAL IDENTFICATION	Y	N	
CORRECT M# ON THE MATERIAL	Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.
RECORD RESULTS BELOW

	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY:	SIGNED OFF BY:
DATE: FEB 28 2018	DATE:

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW ISSUE	17-790	17.12.13	VM	ML
B	MIN & MAX Rc CHANGED	18-523	18.01.24	VM	ML
C	ADD AISI 4142	18-544	18.02.14	ML	ML

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL : AISI 4140 / 4142 STEEL BAR
MINIMUM ROCKWELL C = 28 Rc
MAXIMUM ROCKWELL C = 32 Rc

SPECIFICATION: ASTM A29, AMS 6349, AMS 6382, AMS 6529, MIL-S-5626, MIL-S-24093

PART NUMBER: MT-4140-B-[T.TTT] x [W.WWW]
WHERE "T.TTT" = THICKNESS IN INCHES
WHERE "W.WWW" = WIDTH IN INCHES

EX. 4.0" x 6.0" BAR = MT-4140-B-4.000x6.000

DART AEROSPACE Hawkesbury, Ontario, Canada

TITLE: AISI 4140 / 4142 STEEL BAR

PART NO.: MT-4140-B | REV: C

TOOL NO.

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES INTERPRET PER ASME Y14.5M 2009 DIMENSIONS APPLY AFTER FINISHING

	INITIALS AND DATE
DESIGNED BY:	VM 12/13/2017
DRAWN BY:	ML 02/14/2018
CHECKED BY:	VM 02/14/2018
MFG REVIEW BY:	DD 02/14/2018
APPROVED BY:	ML 02/14/2018

TOLERANCES: XXX ± .005, XX ± .01, X ± .1, FRACTIONS ± 1/8, ANGLES ± .5°, SURFACE ROUGHNESS

SCALE: NTS | SHEET 1 OF 1

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-HRS-R-2.500 PO / BATCH NO. 039087/5046346

DATE: FEB 28 2018

MATERIAL CERT REC'D: Yes THICKNESS ORDERED: 2.500

QUANTITY RECEIVED: 10 THICKNESS RECEIVED: 2.500

QUANTITY INSPECTED: 10 SHEET SIZE ORDERED: N/A

QUANTITY REJECTED: 0 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	Astm A36
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	Heat # 6214423605
CORRECT MATERIAL IDENTFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.
RECORD RESULTS BELOW

	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: DAS 11	SIGNED OFF BY:
DATE: 9-8 FEB 28 2018	DATE:

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW ISSUE		07/09/2017	SAC	WM
B	CORRECTED DRAWING NUMBER IN TITLE BLOCK	17-645	06/10/2017	SAC	WM

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: HOT ROLLED STEEL ROUND BAR

SPECIFICATION: ASTM A36 OR ASTM A1011 OR 44W OR ASTM A1018

PART NUMBER: MT-HRS-R-[D.DDD]

WHERE D.DDD IS DIAMETER IN INCHES

EXAMPLE: MT-HRS-R-0.250

TOLERANCES PER MANUFACTURER SPECIFICATIONS

DART AEROSPACE Hawkesbury, Ontario, Canada

TITLE: HOT ROLLED STEEL ROUND BAR

DWG NO: MT-HRS-R REV: B

DESIGN BY:	SAC 07/09/2017	.XXX ± .005	FRACTIONS ± 1/8
DRAWN BY:	SAC 10/06/2017	.XX ± .01	ANGLES ± 5°
CHECKED:	VM 10/10/2017	.X ± .1	SURFACES = 125
MFG. APPR:	DP 10/11/2017	1. DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED	
APPROVED:	WM 10/12/2017	2. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	
DATE:	06/10/2017	3. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE: NTS	WEIGHT: N/A LBS	SHEET 1 OF 1	

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-A513-T-0.750WO.188 PO / BATCH NO.: 039087/5046347

DATE: FEB 28 2018

MATERIAL CERT REC'D: Yes

QUANTITY RECEIVED: 24'

QUANTITY INSPECTED: 24'

QUANTITY REJECTED: 0

THICKNESS ORDERED: WO.188

THICKNESS RECEIVED: WO-188

SHEET SIZE ORDERED: N/A

SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	Astm A513 Type 5
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	Heat # 4150966
CORRECT MATERIAL IDENTFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.
RECORD RESULTS BELOW

	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: DAS 11	SIGNED OFF BY:
DATE: 9-89 FEB 28 2018	DATE:

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW RELEASE	17-655	17.09.06	VM	WM
B	TYPE 5 ADDED, TEMPLATE UPDATED	17-790	17.12.13	VM	ML

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: ASTM A513 TYPE 5 (1020/1026) SEAMLESS ALLOY STEEL ROUND TUBING (DOM)

SPECIFICATION: ASTM A513 ~~TYPE 5~~

PART NUMBER: MT-A513-T-[D.DDD]W[T.TTT]

WHERE D.DDD IS OUTSIDE DIAMETER IN INCHES

WHERE T.TTT IS WALL THICKNESS IN INCHES

EG. 3/4" ROUND TUBING WITH .120" WALL THICKNESS = MT-A513-T-0.750W0.120

DART AEROSPACE Hawkesbury Ontario, Canada

TITLE: ASTM A513 TYPE 5 (1020/1026) ALLOY STEEL ROUND TUBING (DOM)

PART NO: MT-A513-T — REV: B

TOOL NO: -

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES INTERPRET PER ASME Y14.5M-2009 DIMENSIONS APPLY AFTER FINISHING

	INITIALS AND DATE
DESIGNED BY:	VM 17/12/13
DRAWN BY	VM 12/13/2017
CHECKED BY:	ML 12/20/2017
MFG REVIEW BY:	DP 12/20/2017
APPROVED BY:	ML 12/20/2017

TOLERANCES: XXX ± .005, XX ± .01, X ± .1, FRACTIONS ± 1/8, ANGLES ± .5°, SURFACE ROUGHNESS

SCALE: NTS — SHEET 1 OF 1

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M606T6RC.625 PO / BATCH NO.: 039087/5C46348

DATE: FEB 28 2018

MATERIAL CERT REC'D: Yes

QUANTITY RECEIVED: 40'

QUANTITY INSPECTED: 40'

QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.625

THICKNESS RECEIVED: 0.625

SHEET SIZE ORDERED: N/A

SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	N	
CORRECT FINISH	Y	N	
CORROSION	Y	N	
CORRECT GRAIN DIRECTION	Y	N	
CORRECT MATERIAL PER M-DRAWING	Y	N	Astm B-221
CORRECT THICKNESS	Y	N	
PHOTO REQUIRED	Y	N	
CORRECT REF # TO LINK CERT	Y	N	Heat # 68259
CORRECT MATERIAL IDENTFICATION	Y	N	
CORRECT M# ON THE MATERIAL	Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.
RECORD RESULTS BELOW

	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: DAS	SIGNED OFF BY:
DATE: FEB 28 2018	DATE:

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR

SPECIFICATION: QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221

B

PART NUMBER: M6061T6R|D.DDD|
DIA.

WHERE "D.DDD" = DIAMETER IN INCHES

EG. 5/8" ROUND BAR = M6061T6R0.625

RELEASED
2009 -09- 09

REV	DESCRIPTION	BY	DATE
B	REFORMAT DWG, ADD B211& B221 SPEC (ZN D8-1), REF PAR 06-020A	CP	09.07.13
A	NEW ISSUE	DS	01.06.08

DESIGN	
DRAWN	
CHECKED	
MFG. APPR.	
APPROVED	
DE APPR.	
DATE	09.07.13

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. M6061T6R — REV. B — SHEET 1 OF 1

TITLE: 6061-T6 ROUND BAR — SCALE: NTS

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061T6R 0.563 PO / BATCH NO.: 0389087/5046349

DATE: FEB 28 2018

MATERIAL CERT REC'D: Yes THICKNESS ORDERED: 0.563

QUANTITY RECEIVED: 96 THICKNESS RECEIVED: 0.563

QUANTITY INSPECTED: 96 SHEET SIZE ORDERED: N/A

QUANTITY REJECTED: 0 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	Astm-B221
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	Heat # 201714863
CORRECT MATERIAL IDENTFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.
RECORD RESULTS BELOW

	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: DAS 11	SIGNED OFF BY:
DATE: 9-89 FEB 28 2018	DATE:

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR

SPECIFICATION: QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221

B

PART NUMBER: M6061T6R|D.DDD|
DIA.

WHERE "D.DDD" = DIAMETER IN INCHES

EG. 5/8" ROUND BAR = M6061T6R0.625

RELEASED
2009 -09- 09

REV.	DESCRIPTION	BY	DATE
B	REFORMAT DWG, ADD B211& B221 SPEC (ZN D8-1), REF PAR 08-020A	CP	09.07.13
A	NEW ISSUE	DS	01 06 08

DESIGN	
DRAWN	
CHECKED	
MFG. APPR.	
APPROVED	
DE APPR	
DATE	09.07.13

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. M6061T6R — REV. B — SHEET 1 OF 1

TITLE: 6061-T6 ROUND BAR — SCALE: NTS

CERTIFICATE OF TEST
CERTIFICAT D'ESAIS

Certification Date
26-FEB-2018

CUSTOMER ORDER NUMBER
NUMÉRO DE COMMANDE DU CLIENT

AC00013839

Invoice Number
S704068

PART NUMBER/NUMÉRO DE PIÈCE

506446

SOLD TO: ACIER OUELLETTE INC.
VENDU À: DIVISION SALABERRY DE VALLEYFIELD
935, BOUL. DU HAVRE
SALABERRY-DE- VALLEYFIELD QC J6S 5L1

SHIP TO: ACIER OUELLETTE INC.
EXPÉDIÉ À: DIVISION SALABERRY DE VALLEYFIEI
935, BOUL. DU HAVRE
SALABERRY-DE- VALLEYFIE QC J6

Description: 4140/4142 HR HT BAR STRESS FREE 269/321 BHN
3-3/4 RD X 6'2.0" (74.0") REMNANT Line Total: 231.8 LB
HEAT: L6021 ITEM: 506446

Specifications:
ASTM A193 GR B7 16 ASTM A434 GR BC 15 ASME SA193 GR B7 15
ASTM A29 15 ASTM E381 01 ASTM A962 16A
EN 10204 3.1 04

CHEMICAL ANALYSIS

C	MN	P	S	SI	CR	NI	MO
0.43	0.95	0.0090	0.02	0.24	0.98	0.16	0.20

CU	AL
0.25	0.026

RCPT: R267205

COUNTRY OF ORIGIN : USA

MECHANICAL PROPERTIES

DESCRIPTION	YLD STR PSI	ULT TEN PSI	%ELONG IN 02 IN	%RED IN AREA	HARDNESS BHN
	119825.0	139497.0	16.6	52.7	320

IDEAL DIAMETER : 6.16 IN GRAIN SIZE :5 -

The above data were transcribed from the manufacturer's Certificate of Test after verification for completeness and specification requirements of the information on the certificate. All test results remain on file subject to examination. ./Les informations ci-haut-mentionnées sont transcrites du certificat d'essais du manufacturier après vérification de l'état complet des spécifications inscrites sur le certificat. We hereby certify that the material covered by this report will meet the applicable requirements described herein, including any specification forming a part of the description. ./Par les présentes, nous certifions que le matériel couvert par ce rapport rencontre les spécifications décrites ci-haut.
The willful recording of false, fictitious, or fraudulent statements in connection with test results may be punishable as a felony under federal statutes. ./Les informations fausses, fictives ou frauduleuses en rapport avec le résultat des essais sont punissables en vertu des lois fédérales.

Material did not come in contact with mercury while in our possession./Par les présentes, nous certifions que le matériel couvert par ce rapport rencontre les spécifications décrites ci-haut.

JOANNE DESPRÉS

MANAGER QUALITY ASSURANCE
GÉRANT DE L'ASSURANCE QUALITÉ

CERTIFICATE OF TEST
CERTIFICAT D'ESAIS

Certification Date
26-FEB-2018

CUSTOMER ORDER NUMBER
NUMÉRO DE COMMANDE DU CLIENT
AC00013839

Invoice Number
S704068

PART NUMBER/NUMÉRO DE PIÈCE
506446

SOLD TO: **VENDU À:**	ACIER OUELLETTE INC. DIVISION SALABERRY DE VALLEYFIELD 935, BOUL. DU HAVRE SALABERRY-DE- VALLEYFIELD QC J6S 5L1	**SHIP TO:** **EXPÉDIÉ À:**	ACIER OUELLETTE INC. DIVISION SALABERRY DE VALLEYFIEI 935, BOUL. DU HAVRE SALABERRY-DE- VALLEYFIE QC J6

Description: 4140/4142 HR HT BAR STRESS FREE 269/321 BHN
3-3/4 RD X 6'2.0" (74.0") REMNANT Line Total: 231.8 LB
HEAT: L6021 ITEM: 506446

STRAND CAST REDUCTION RATIO 39.1 TO 1
MATERIAL IS FREE FROM MERCURY CONTAMINATION
NO WELD REPAIR PERFORMED ON MATERIAL
THERMAL TREATMENT: OK
QUEN: MIN 1700 MAX 1750 DEG FAR
TEMP MIN 1100 DEG FAR
AUSTEN: 1625F .1HOURS-WATER QUENCH
TEMPER: 1280F .2 HOURS
MACRO: OK

COMMENTS
MELTED AND MFG IN THE USA
CONFORMS TO 1E0509 #22 KB 8-25-17
APPROVED FOR 1E0028 P/N 363-9881 PER ETQ DEVIATION ADF 8/30/17

Material did not come in contact with mercury while in our possession./Par les présentes, nous certifions que le matériel couvert par ce rapport rencontre les spécifications décrites ci-haut.

JOANNE DESPRÉS

MANAGER QUALITY ASSURANCE
GÉRANT DE L'ASSURANCE QUALITÉ

Eaton Steel Bar Company Inspection Certificate 1686880 — EN 10204:2004-3.1

Customer	BOL	Ship Date	Customer PO	Item	Customer Item	Item Description
	222244	13-Dec-2017	B38384	11142 rev 005	506295	1 HR RD 4140/42MM 24ft8in SBQ QTSF FG MST

All bundles listed below were produced using steel from Heat 177569 issued by ALTON STEEL and were completed from Eaton Steel Job 828517.

Chemistry	Description	Value	Units
C	Carbon	0.41000	PWGT
Mn	Manganese	0.89000	PWGT
P	Phosphorus	0.01300	PWGT
S	Sulfur	0.02000	PWGT
Si	Silicon	0.23000	PWGT
Ni	Nickel	0.08900	PWGT
Cr	Chromium	0.84700	PWGT
Mo	Molybdenum	0.15900	PWGT
Al	Aluminum	0.00300	PWGT
Cu	Copper	0.25000	PWGT
V	Vanadium	0.02800	PWGT
Cb	Columbium	0.00300	PWGT
N	Nitrogen	0.01100	PWGT
P+S	Element Sum Limit	0.03300	PWGT
DI	Ideal Diameter	4.94000	IN
Cleanliness	**Description**	**Value**	**Units**
MACRO ETCH	Report macro etch results.		.
Geometry	**Description**	**Value**	**Units**
DIAMETER	Diameter	0.9910 - 1.0090	IN
Jominy	**Description**	**Value**	**Units**
J1	1/16 inch from Quenched End	56	HRC
J2	2/16 inch from Quenched End	56	HRC
J3	3/16 inch from Quenched End	56	HRC
J4	4/16 inch from Quenched End	56	HRC
J5	5/16 inch from Quenched End	56	HRC
J6	6/16 inch from Quenched End	55	HRC
J7	7/16 inch from Quenched End	54	HRC
J8	8/16 inch from Quenched End	52	HRC
J9	9/16 inch from Quenched End	51	HRC
J10	10/16 inch from Quenched End	50	HRC
J11	11/16 inch from Quenched End		HRC
J12	12/16 inch from Quenched End	47	HRC
J14	14/16 inch from Quenched End	45	HRC
J16	16/16 inch from Quenched End	42	HRC
J18	18/16 inch from Quenched End	42	HRC
J20	20/16 inch from Quenched End	41	HRC
J22	22/16 inch from Quenched End		HRC
J24	24/16 inch from Quenched End	39	HRC
J28	28/16 inch from Quenched End	36	HRC
J32	32/16 inch from Quenched End	35	HRC

Mechanical	Description	Value	Units
TENSILE PSI	Tensile Strength in PSI Units	148000	PSI
YIELD PSI	Yield Strength in PSI Units	138000	PSI
ELONGATION	Percent Elongation	17.00	PCT
REDUCTION	Percent Reduction in Area	52.0	PCT
BRINELL SURF	Brinell Surface	271.0	BHN
Heat Treating	**Description**	**Value**	**Units**
TEMPER TEMP F	Temper Temp in Fahrenheit	500 - 2500	DEGF
AUSTEN TEMP F	Austenitize Temp in Fahrenheit	1600 - 1700	DEGF
SR TEMP F	Stress Relief Temp in Fahrenheit	500 - 2500	DEGF
MAGNETISM-HT	Magnetism in Gauss	0 - 20	GN
TIME AT TEMP	Time at Temperature	Report	.
QUENCH MEDIA	Quench Media Requirements	P&W/O	.
STRESS FREE	Cert stress free	CERTIFIED	.
HT4140-42QT	Quench & Temper	CONFORMS	.
Mill Processing	**Description**	**Value**	**Units**
MELT COUNTRY	Melted in Country	USA	.
ROLLED COUNTRY	Rolled in Country	USA	.
RED RATIO	Reduction Ratio	4.94	RED
ASTM Standard	**Description**	**Value**	**Units**
A193/193M-01	Grade B7	CONFORMS	.
A304-05	Carbon & Alloy Steel Bars End Quench Req	CONFORMS	.
A322-13	Steel Bars, Alloy, Standard Grades	CONFORMS	.
A434-90a-BC	ASTMA BC Tensile and Yield properties	CONFORMS	.
Structure	**Description**	**Value**	**Units**
PERCENT TM	Percent Tempered Martensite	80 - 100	PCT
MICROSTRUCTURE	Reported Microstructure	TM	.

Tag Number	Qty	Units	Length
022-2158147	2925	LBS	24ft6in

Bundle tags with Eaton Steel identifiers reference the steel grade, heat, purchase order number where applicable, part number, product description and quantity. Material produced in accordance with Eaton Steel's Quality Manual QM-00002 Rev 0 dated 11/21/2013.

We hereby certify the above to be in conformance, and a true copy of data represented in company records. This steel was not subject to weld repair or exposed to mercury while in the possession of Eaton Steel.

Created on 13-Dec-2017
Thomas Snabes, Corporate Metallurgist

This document was prepared by means of electronic data processing and is valid without signature.

10221 Capital Avenue, Oak Park, MI 48237 USA
http://www.eatonsteel.com
Tel: 248-398-3434
Fax: 248-398-1434

CERTIFIED MILL TEST REPORT

Alton Steel Test Lab
#5 Cut Street
Alton, IL 62002-9011
(618) 463-4490 EXT 2486
(618) 463-4491 (Fax)

BILL TO
Eaton Steel Corporation
10221Capital Avenue
Oak Park, MI 48237

SHIP TO
Eaton Steel Corporation
c/o Apollo Heat Treat
10400 Capital Street
Oak Park, MI 48237

Date	08/25/2017	Customer PO	163357-MS	**Specifications**
ASI Ord No.	67517	Customer PT.	10913	SAE 4140
ASI Ord Line Item	1			ASTM A 304-11, ASTM A 322-07

Item Description
Steel Bar, Hot Rolled, 1.0000, 25' 0 "

Strand Cast, RR =62.39:1

Heat Number	Yield PSI	Tensile PSI	% Elongation	% RDA	Bend Test

CHEMICAL ANALYSIS TEST METHODS ASTM E-415 & E-1019

Heat Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al	Nb/Cb	V	B	Ti	N	Ca
177569	0.41	0.89	0.013	0.020	0.23	0.25	0.089	0.847	0.159	0.011	0.003	0.003	0.028	0.0003	0.0001	0.0110	0.0019

JOMINY HARDENABILITY USING ASTM A-255 CALCULATED FROM CHEMICAL DI

Heat Number	GS	DI	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J12	J14	J16	J18	J20	J24	J28	J32
177569	7	4.94	56	56	56	56	56	55	54	52	51	50	47	45	42	42	41	39	36	35

SPECIAL TEST RESULTS

	ASTM E-45 Method A								ASTM E-45 Method C		SAE J422		ASTM E-381			Charpy		Hardness		
Heat Number	TA	TB	TC	TD	HA	HB	HC	HD	S	O	S	O	S	R	C			RC	RB	BHN
177569													1	2	2					

ADDITIONAL COMMENTS

No mercury, lead, radium, or alpha containing material or equipment is used or deliberately added in the production of this steel. No weld or weld repairs were performed on this material. This Steel is 100% Electric Arc Furnace Melted and Rolled in the U.S.A. Material qualifies as NAFTA origination.

Subscribed and sworn to before me, a Notary Public, in and for the county of Madison, State of Illinois

this _____ Day of _____

My commission expires_____

_____
(Notary Public)

Alteration or reproduction of this report, except in full, is not allowed without written approval by a representative of Alton Steel Incorporated.

I hereby certify that the above tests are correct as contained in the records of ALTON STEEL INCORPORATED

Quality Leader: Scott Hall

Scott Hall

GERDAU

Huntington Facility - Test Report

Printed: 10/24/2017 11:10 AM

25 Commercial Road, Huntington, IN 46750
(260) 356-9520
fax (260) 356-9522

Sales Order	41745	Customer Name	EATON STEEL CORPORATION
Heat Number	177569	Location	10221 CAPITAL AVE.
Size	1.0000		OAK PARK, MI 48237
Turned OD	1.0000		
Grade	4140		

Test Remarks: 1 HR RD 4140/42MM 25FT FQ FG MST WO 828517 FG 11142

Approved ☑ By Metallurgist Approved Date 10/24/17

Chemistry Data

	Heat Number	C	Mn	P	S	Si	Ni	Cr	Mo	Cu	Al	V	B	Other
	177569	0.410	0.890	0.013	0.020	0.230	0.089	0.847	0.159	0.250	0.003	0.028	0.0030	

Q&T Hardness Test Data

	HardnessType	Min	Max	Location	Sample Location
	Rc		27.9		Surface
	Rc		32.7		Mid Radius
	Rc		33.7		Core

Q&T Tension Test Data

Sample Gage: .500" Dia.
Bale Number:

Tensile	Yield 1	Method 1	Yield 2	Method 2	Elong %	R/A %	Gage Length	Tensile Location	PC #
148 Ksi	138 Ksi	.2% Offset			17.0	52.0	2.000" G.L.	Center	

Heat Treat Data

Austentized at 1,630°F for 0.7 minutes
Tempered at 1,400°F for 0.7 minutes

Induction Heating
Water Quenched

Other Test Data

Decarb (inches)	Straightness	Magnetism (gauss)	As Quenched (Rc)	Microstructure
	0.125"/5 Ft	+/- 5		

Description of Other Tests

- Produced Stress Free

We hereby certify that the reported data are correct according to Gerdau tests and those of its suppliers.

Doug Melohl, Metallurgist

F037A

422637

CERTIFIED MATERIAL TEST REPORT

GERDAU

US-MI-ST PAUL
1678 RED ROCK ROAD
SAINT PAUL, MN 55119
USA

CUSTOMER SHIP TO	CUSTOMER BILL TO
LES ACIERS TRANSBEC 1997 LTEE 1951 CHEMIN DE L ENERGIE VARENNES,QC J3X 1P7 Canada	LESACIERS TRANSBEC 1997 LTEE 4054 BOUL LE CORBUSIER LAVAL,QC H7L 5R2 Canada

GRADE	SHAPE / SIZE	DOCUMENT
44W	Round Bar / 2 1/2"	00000-1929
LENGTH	**WEIGHT**	**HEAT / BATCH**
20'00"	8,430 LB	62144236/05

SALES ORDER	CUSTOMER MATERIAL N°	SPECIFICATION / DATE or REVISION
4897272/000220		CSA G40.20-13/G40.21-13

CUSTOMER PURCHASE ORDER NUMBER	BILL OF LADING	DATE
PAJ47300T	1301-0000031744	10/04/2017

49672

CHEMICAL COMPOSITION

C %	Mn %	P %	S %	Si %	Cu %	Ni %	Cr %	Mo %	V %	Nb %	Sn %
0.17	0.76	0.005	0.013	0.26	0.17	0.08	0.13	0.015	0.029	0.001	0.018

MECHANICAL PROPERTIES

Elong. %	G/L Inch	UTS PSI	UTS MPa	YS PSI	YS MPa
30.00	2.000	76000	524	53500	369
29.00	2.000	76000	524	49000	338

GEOMETRIC CHARACTERISTICS

R/R
8.43

HARDENABILITY

DI A255
Inch
0.60

COMMENTS / NOTES

Roll batch 62144236/05 roll date 7/10/2017
CSA-G40.20-13/G40.21-13(R2009) Grade 44W
This grade meets A36 material ASTM A36/A36M-14 A6/A6M-14
Material 100% melted and rolled in the USA. Manufacturing processes for this steel, which may include scrap melted in an electric arc furnace and hot rolling, have been performed at Gerdau St. Paul Mill, 1678 Red rock Rd, St. Paul, Minnesota, USA. All products produced from strand cast billets. Silicon killed (deoxidized) steel. No weld repairment performed. Steel not exposed to mercury or any liquid alloy which is liquid at ambient temperatures during processing or while in Gerdau St. Paul Mill's possession. Any Modification to this certification as provided by Gerdau St. Paul Mill without the expressed written consent of Gerdau St. Paul Mill negates the validity of this test report. This report shall not be reproduced except in full, without the expressed written consent of Gerdau St. Paul Mill. Gerdau St. Paul Mill is not responsible for the inability of this material to meet specific applications

The above figures are certified chemical and physical test records as contained in the permanent records of company. We certify that these data are correct and in compliance with specified requirements. This material, including the billets, was melted and manufactured in the USA. CMTR complies with EN 10204 3.1.

BHASKAR YALAMANCHILI
QUALITY DIRECTOR

ALEA BRANDENBURG
QUALITY ASSURANCE MGR

#6783

Tum 34188

Mid-West Mfg. LLC
A PTC Alliance Company
475 East 16th Street
Chicago Heights IL 60411-

****
REPORT OF CHEMICAL AND MECHANICAL TESTS
****

20-SEP-201

Customer PO Number : BC6524-01
Order Number : 356603 Line 1
Manufactured To : MARMON/CANADA-A513T5-1026-SRA
Customers Part : N/A
Your Vendor Code :
Bill of Lading # : 400914
Part Code : 71584

This material conforms to:

Length	Grade
20'-24'	1026-AK

TAG: BC6524-01

TAG:

.750/.755" OD X .375/.370" ID X (.188" REF WALL)
C- 1026 ASTM A513 TYPE 5
SRA
20/24' RANDOM LENGTHS
CHEMICAL AND MECHANICAL CERTIFICATIONS REQUIRED

CHEMICAL ANALYSIS - PERCENT COMPOSITION

Lot Number	Heat Number	Yr-Vdr	C	MN	P	S	SI	CU	NI	CR	MO	AL	CA
C21025290	4150966	16-221	0.230	0.66	0.011	0.003	0.030	0.03	0.01	0.03		0.047	0.0026

MECHANICAL PROPERTIES

Lot Number	Heat Number	Yr-Vdr	Yield Str	Tensile Str	Percent Elong	Hardness (Rockwell B)
C21025290	4150966	16-221	83,700 PSI	107,200 PSI	16	98.

TUBE MANUFACTURING SOURCE IS: MADE IN THE USA

HEAT# 4150966 STEEL MELT MILL SOURCE IS: Mittal (Cleveland, OH)
HEAT# _____ STEEL MELT MILL SOURCE IS: _____

Form # PT 1000 Reviewed 25-Nov-2013

Authorized Signature _____ (Quality Assurance)

Date 9/20/16

We here certify that the chemical analysis and/or tests shown in this report are correct as contained in the records of this company

Knowingly and willingly falsifying or concealing a material fact on this form, or making false, fictitious or fraudulent entries or representations herein could constitute a felony punishable under federal statutes.

5169 KHL 50 TRA 2108 49676

Test de dureté Rockwell
Rockwell Hardness Test

Client / Customer : **LES ACIERS TRANSBEC (1997) LTEE.**

Adresse / Address : **4054 BOUL. LE CORBUSIER, #201**
LAVAL, QC
H7L5R2

commande Sapa / Sapa order # : **6120924**

bon de commande / Purchase order # : **OU-47030**

de matrice / Die # : **MS 9907** Description : **5/8"DIA ROD**

Alliage & trempage / Alloy & temper : **6061 T6** Longueur / Lenght : **6097 mm**

de contrôle / Control # : **82387-1**

de coulée / Cast # : **68259**

Dureté Rockwell E / Rockwell E hardness : **89 HRE** Min. requis / Min. required : **88 HRE** Max. permis / Max. permitted : **100 HRE**

Composition chimique typique / Typical chemical composition :

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
6063	0,20 - 0,60	0,35 Max	0,10 Max	0,10 Max	0,45 - 0,90	0,10 Max	0,10 Max	0,10 Max
6005	0,60 - 0,90	0,35 Max	0,10 Max	0,10 Max	0,40 - 0,60	0,10 Max	0,10 Max	0,10 Max
6005A	0,66- 0,74	0,14 - 0,28	0,08 - 0,16	0,18 – 0,26	0,46 – 0,54	0,03 Max	0,05 Max	0,05 Max
6061	0,40 - 0,80	0,70 Max	0,15 – 0,40	0,15 Max	0,80 – 1,20	0,04 - 0,35	0,25 Max	0,15 Max
6351	0,7 - 1,3	0,5 Max	0,10 Max	0,40 - 0,80	0,40 - 0,80	—	0,20 Max	0,20 Max

Nous certifions que le matériel fourni rencontre les exigences chimiques telles qu'annoncées par la norme ASTM B-221-14 excepté pour la section 8.2 (nombre de spécimen) .

We hereby certify that the material supplied meets the chemical properties as published by the ASTM B-221-14 except for section 8.2 (number of specimen) .

Sincèrement vôtre, date : **2017-02-02**
Yours truly,

Daniel Alfredo Pelletier
Directeur Qualité
Quality Director

BS 7AA

49946

PO 13471

#5180

CERTIFIED INSPECTION REPORT AND TEST RESULTS FOR EXTRUDED PRODUCTS

Service Center Metals
5850 Quality Way
Prince George, VA 23875

SCM Can Do.

Made In the U.S.A.

OUR ORDER NUMBER	ITEM
929759	2

MANIFEST NUMBER	DIE NUMBER	DATE OF SHIPMENT	CERTIFICATION
344426	RD0370	9/21/2017	ASTM-B221-14 No Stencil
CUSTOMER PO	**ALLOY / TEMPER**	**SALESPERSON**	**SPECIFICATION**
VIM-643085	6061-T6511	D.Schroeder (Canada)	AMS-QQA-200/8 Rev-A
CUSTOMER PART NUMBER	**DESCRIPTION**		
RD0370	Lightning Rod Tite 0.562 +.004/-.003		

Quantity Certified 799 lbs 228 pcs

We hereby certify that the material covered by this report has been inspected in accordance with the most recent certification revision, and has been found to meet the applicable requirements described herein, including any specifications forming a part of the description, and that samples representative of the material met the composition limits and had the mechanical properties shown. Items produced and certified as 6061-T6511 also meet the requirements of 6061-T6.

All aluminum products supplied by Service Center Metals, LLC contain no functional mercury. Neither mercury nor its compounds are used in the manufacture of aluminum products at our facility. Furthermore, aluminum products supplied by Service Center Metals have not, to the best of our knowledge, contacted any source of mercury.

SCM is ISO 9001-2015 certified *This product is RoHS-2, REACH, and DFARS compliant*

Mechanical Properties

Tests	Lot No.	Test Date	Ultimate Tensile Strength (KSI) min	Ultimate Tensile Strength (KSI) max	Yield Strength (KSI) min	Yield Strength (KSI) max	Percent Elongation min	Percent Elongation max
1	201714863	9/21/17	47.80	47.80	44.40	44.40	15.80	15.80

Chemical Composition for Aluminum Alloy 6061

Cast #	Lot No.	Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	AL	Others Each	Others Total	Melt Source:
101M170825B	201714863	6061	0.76	0.36	0.32	0.10	0.88	0.11	0.05	0.03	97.40	0.05	0.15	*United States of America*
103E170530A	201714863	6061	0.74	0.36	0.32	0.11	0.89	0.16	0.05	0.03	97.32	0.05	0.15	*United States of America*

Print Date: 9/21/2017

SCM products are melted and extruded in the USA

Calvin J. Wiggins, Director of Quality & Technical Services

Rev 7/20/17